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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,832	02/18/2004	Benoit Brule	FR-AM1929 NP	3754

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ARKEMA INC.  
PATENT DEPARTMENT - 26TH FLOOR  
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EXAMINER

WOODWARD, ANA LUCRECIA

ART UNIT PAPER NUMBER

1711

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/780,832

Applicant(s)

BRULE, BENOIT

Examiner

Ana L. Woodward

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on June 9, 2006
- 2a) ☒ This action is **FINAL**. 2b ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-10 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6 and 10 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims 7-9 drawn to an invention nonelected with traverse in the reply filed on June 14, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 112***

2. Claims ~~4, 5~~ and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims ~~4~~ and ~~5~~ depend upon a cancelled claim.

In claim 10, it is unclear as to whether or not (C1) and (C2) are one and the same entity given that “elastomer” is indefinite as to scope and meaning.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 6,090,459 (Jadamus et al) in view of U.S. 5,376,712 (Nakajima) as per reasons of record, further in view of U.S. 6,617,377 (Chacko).

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Jadamus et al clearly disclose that the polyamides can be impact modified (column 3, lines 9-22 and examples per Table 1). All of the suitable impact modifiers disclosed read on the polyolefin component of the present claims, as said term is defined by applicant's own specification (pages 9-14). It is well known in the art that "impact-modified polyamide" is, in effect, a *blend* of a polyamide and an impact modifier (Nakajima, e.g., column 1, lines 7-8, column 2, line 53, column 8, line 68, etc.). Thus, Jadamus et al's disclosure of "impact-modified polyamide" does teach and suggest blends of polyamide and polyolefin. As to the amount, it is known from Nakajima that impact modified polyamides customarily employ from about 5 to about 50 parts by weight of impact modifier per 100 parts by weight of the polyamide (column 8, lines 24-27). Accordingly, there is reasonable basis for believing that the "impact modified polyamide" of Jadamus et al would have a similar impact modifier content.

As to the new claim requirement "wherein said carbon nanotubes concentrate in the polyamide", it is known that polyamides are capable of forming secondary bonding with nanoparticles such as carbon nanotubes (Chacko column 3, lines 60-62, column 4, lines 3 and 48, etc.). Accordingly, in Jadamus et al's compositions comprising a polyamide/polyolefin blend (i.e., impact-modified polyamide) and carbon nanotubes, one having ordinary skill in the art would have reasonably expected the carbon nanotubes to reside in the polyamide matrix due to the secondary bonding between the polyamide and the nanotubes. Furthermore, no distinction can be seen between the method of preparing the compositions based on impact-modified polyamides of Jadamus and those of the present claims, i.e., the nanotubes are added to the already prepared polyamide/polyolefin blend.

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5. Claims 1 and ~~4~~-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. U.S. 6,090,459 (Jadamus et al) as per reasons of record further in view of U.S. 6,617,377 (Chacko), described hereinabove.

In Jadamus et al, the polyamides can contain up to 40% by weight of other thermoplastics such as styrene-based copolymers, reading on the presently claimed polyolefin component (column 2, line 58 – column 3, line 4).

It would have been obvious to one having ordinary skill in the art and within the purview of Jadamus et al to employ a polyamide, reading on the presently claimed polyamide, having up to 40% by weight of a styrene-based copolymer, reading on the presently claimed polyolefin, with the reasonable expectation of success. The presently claimed “polyolefin”, given its broadest reasonable interpretation, reads on any polymer derived from olefinically unsaturated monomers, such as the styrene-based copolymers defining patentees’ “other thermoplastic”. In fact, applicants themselves describe these same materials as suitable polyolefins (page 10, lines 8-12).

As to the new claim requirement “wherein said carbon nanotubes concentrate in the polyamide”, it is known that polyamides are capable of forming secondary bonding with nanoparticles such as carbon nanotubes (Chacko column 3, lines 60-62, column 4, lines 3 and 48, etc.). Accordingly, in Jadamus et al’s compositions comprising a polyamide, another thermoplastic resin, such as a styrene-based copolymer reading on the presently claimed polyolefin component, and carbon nanotubes, one having ordinary skill in the art would have reasonably expected the carbon nanotubes to reside in the polyamide matrix due to the secondary bonding between the polyamide and the nanotubes.

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reasonably expected the carbon nanotubes to reside in the polyamide matrix due to the secondary bonding between the polyamide and the nanotubes.

***Response to Arguments***

6. Applicant's arguments filed June 9, 2006 have been fully considered but they are not persuasive with respect to Jadamus et al.

It is maintained that the impact-modified polyamides disclosed and exemplified by Jadamus et al, e.g., VESTAMID, meet the presently “polyamide/polyolefin blend”. It is well known in the art that “impact-modified polyamide” is, in effect, a **blend** of a polyamide and an impact modifier (Nakajima, e.g., column 1, lines 7-8, column 2, line 53, column 8, line 68, etc.). Thus, Jadamus et al’s disclosure of “impact-modified polyamide” does teach and suggest blends of polyamide and polyolefin. As to the amount, it is known from Nakajima that impact modified polyamides customarily employ from about 5 to about 50 parts by weight of impact modifier per 100 parts by weight of the polyamide (column 8, lines 24-27). Accordingly, there is reasonable basis for believing that the “impact modified polyamide” of Jadamus et al would have a similar impact modifier content.

It is furthermore maintained that it would have been obvious to one having ordinary skill in the art and within the purview of Jadamus et al to employ a polyamide, reading on the presently claimed polyamide, having up to 40% by weight of a thermoplastic styrene-based copolymer, reading on the presently claimed polyolefin, with the reasonable expectation of success. The presently claimed “polyolefin”, given its broadest reasonable interpretation, reads on any polymer derived from olefinically unsaturated monomers, such as the styrene-based

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copolymers defining patentees' "other thermoplastic". In fact, applicants themselves describe these same materials as suitable polyolefins (page 10, lines 8-12).

The data presented in Applicants' Figure 1 has been reviewed but is not deemed demonstrative of unexpected results. This is because there is no provision of compositions containing pure polyolefin to compare against those comprising pure polyamide and those comprising polyamide/polyolefin blends. Without said comparison, it cannot be determined as to whether or not the results are unexpected, as opposed to the expected additive effect of using a polyamide and a polyolefin.

7. Applicant's arguments filed June 9, 2006 have been fully considered and are persuasive to the extent that the rejections based on Kurasawa et al and Dupire et al have been withdrawn.

***Allowable Subject Matter***

8. Claim 10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art of record does not reasonably disclose or suggest the use of the particular blend of polyolefins.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

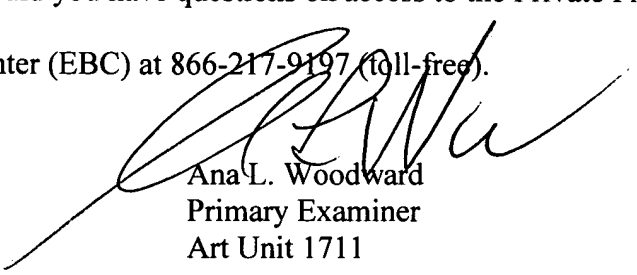
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana L. Woodward whose telephone number is (571) 272-1082. The examiner can normally be reached on Monday-Friday (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ana L. Woodward  
Primary Examiner  
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